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April 1st, 2010
Renesas Electronics Corporation

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User's Manual

RKT102***MH

Precautions and Notes in Connection with Mounting COA-Type μ-Chip Inlet

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Rev.1.00 2007.02

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Note: "***" is a ROM code.

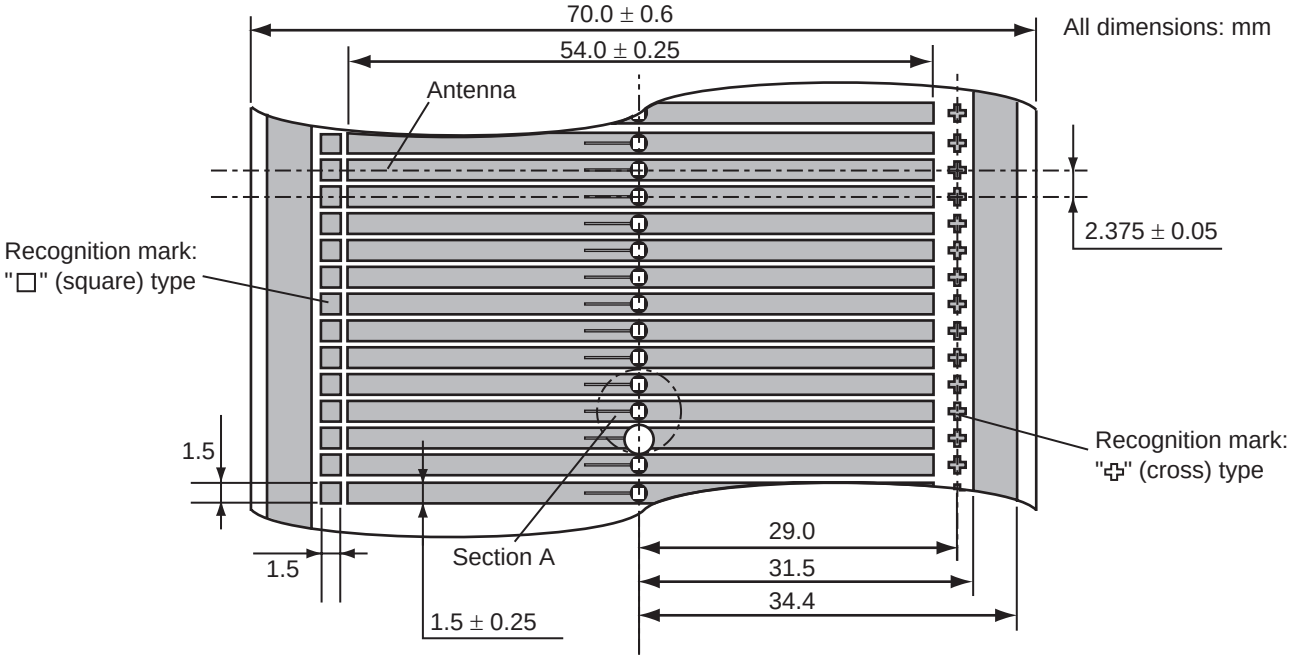
Note: "μ-Chip" and the μ-Chip Logo are either registered Trademarks or Trademarks of Hitachi,Ltd. in Japan and in other countries.

Section 1 Structure of COA-Type μ-Chip Inlet

The μ-chips (COA-type inlet), each of which consists of an antenna and chip, are aligned and mounted on tape as shown in the figure below.

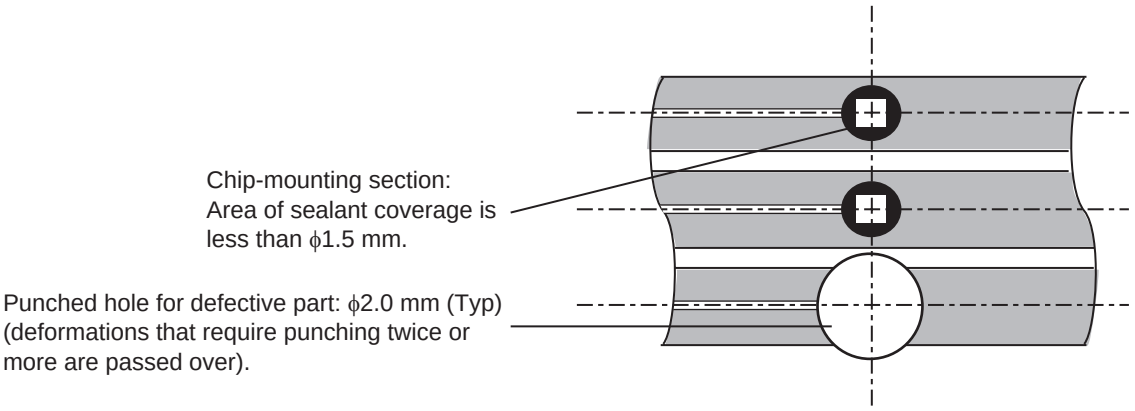
The chip-mounting section is punched through if the chip is defective. (COA: Chip on AL) Note

Note: Please refer to the data sheet. (Document No.: REJ03P0007-0100)

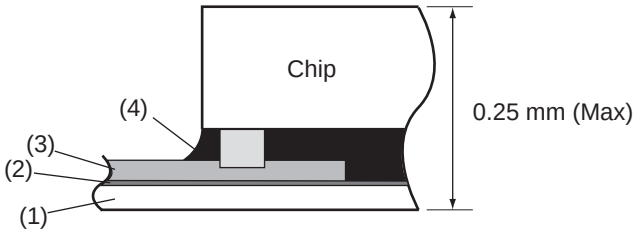


Note: Dimensional tolerance is ± 0.2 mm unless otherwise specified.

Details for Section A


Chip-mounting section:
Area of sealant coverage is
less than ϕ1.5 mm.
Punched hole for defective part: ϕ2.0 mm (Typ)
(deformations that require punching twice or
more are passed over).

Cross-section of B-B'



No.	Item	Specification
1	Base film	25-μm polyethylene naphthalate (PEN)
2	Adhesive	Urethane resin
3	Antenna	20-μm aluminum foil
4	Sealant	Epoxy resin

Note: Typical thickness values.

Section 2 Reliability (Reference)

The major reliability data on the COA-type μ-Chip inlet are given below.

For the official documentation, please contact your nearest Renesas sales office.

Item	Test Conditions	Criterion	Result
High-temp. storage test	125°C	800 h	0/66
Temp. cycle test	–45°C to +125°C 10 m	700 cycle	0/72
X-ray tolerance test	X-ray tube voltage: 120 kV X-ray tube current: 250 mA 1 m (equivalent to 150 Gy)	1 h	0/30
Ultraviolet ray tolerance test	Wavelength: 254 nm, Power density of irradiation: 0.378 Ws/mm^2	10 m	0/30
Salt water dip test	5% NaCl	24 h	0/15
Salt water spray test	35°C, 5% NaCl	24 h	0/45
IPA dip test	Isopropanorl	10 m	0/15

Section 3 Mounting

3.1 Reference Conditions of Mounting

Major conditions of mounting are as follows:

Item		Reference Condition
Tape rupture strength [*1]		265 N/mm^2
Transportation method		Roller
Cutting method		Cutting style [*2]
Stress on inlet	Antenna section	Stress which does not deform
	Chip-mounting section[*3]	8 N or less
Heat-tolerance temp. [*4]		Less than 118°C
Curvature tolerance [*5]		10 mm or more

Notes: 1. Rated rupture strength of PEN
2. Please consider selecting a cutting tool which does not cut the antenna section.
3. Condition obtained by the stress-test method of Figure 1.
4. Condition is glass-transition temp. of the base film.
Actual tolerable temperature during mounting depends on duration and stress imposed in mounting.
Please set conditions after sufficient examination.
5. Condition obtained by the curving-test method of Figure 2.

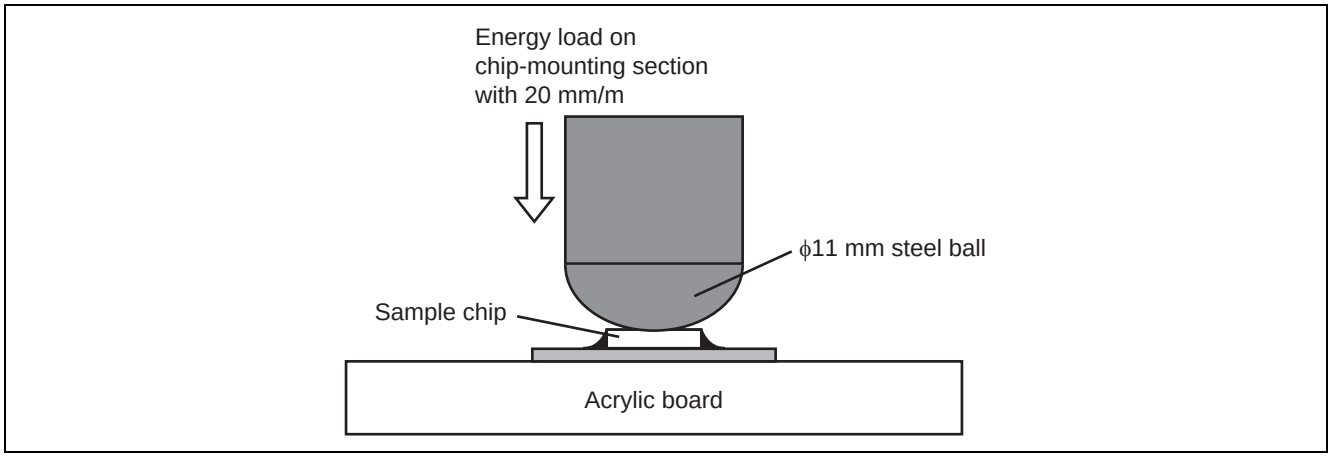
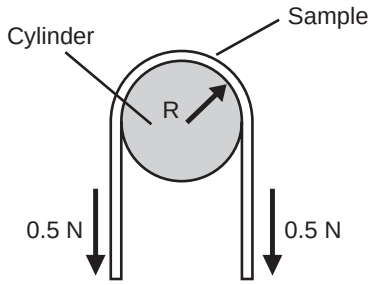


Figure 1 Stress Test on Inlet



Load application period: 100 s

Figure 2 Curving Test

3.2 Measures Against Mechanical Stress

1. Deformation and disconnection of wires of the antenna

   Since the antenna module is thin, wires may be disconnected due to curving, breaking, or distortion during mounting of the inlet or after the product is on the market.

   When considering the method of mounting, eliminate any method that does not provide sufficient reliability.

2. Cracks in the chip-mounting section

   If the inlet is mounted on the product with the aid of a presser, roller, etc., mechanical stress is concentrated on the chip-mounting section, and this may create cracks in the resin or the chip.

   Therefore, please design the method of mounting to avoid impact stress by, for example, creating a slight depression in the part of the press or roller that makes contact with the chip-mounting section. During the design process, please verify that mechanical stress will not be applied to the chip-mounting section after the product goes on the market and is sold.

RKT102*MH User's Manual**

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